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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/13/2005

Eckard Steiger

10191/4158

1388

26646

7590

08/13/2007

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EXAMINER

SINGH, HIRDEPAL

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,702

Applicant(s)

STEIGER ET AL.

Examiner

Hirdepal Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 15 and 17-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 15 and 17-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/2/07
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

This action is in response to the amendment filed on June 15, 2007. Claim 16 is cancelled and claims 27-30 are added. Now claims 14, 15 and 17-30 are pending and have been considered below.

Response to Arguments

1. Applicant's arguments filed June 15, 2007 have been fully considered but they are not persuasive related to the information disclosure statement IDS.

Applicant argues that copies of non-patent literature and foreign references were submitted but as of this date no copies of references except (WO 200121447, DE10049905 and Mason et al. "A Generic Multielement..." proceedings of IEEE) are received. Therefore, the required copies are needed in order to get those references to be considered.

2. Applicant's arguments, see Remarks paragraphs 5-7, filed June 15, 2007, have been fully considered and are persuasive.

The amendment corrected the specification relating the foreign priority and fixed the minor informalities. Therefore, the objection to the specification is withdrawn.

Also, the amendment fixed the antecedent problem relating to claim 21.

Therefore, the rejection under 35 U.S.C. 112 second paragraph has been withdrawn.

3. Applicant's arguments, filed June 15, 2007, with respect to the rejection(s) of cancelled claim 16 which is now combined with independent claim 14 under Mason in view of Boggs have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Beigel et al. (US 2001/0035816).

Information Disclosure Statement

4. The information disclosure statement filed February 16, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 14-15 and 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mason et al. ("A Generic Multielement Microsystem for Portable Wireless Applications" Proceeding of IEEE, VOL 86, No 8, August 1998) in view of Beigel et al. (US 2001/0035816).

Claim 14: Mason discloses a system comprising;

- a. a housing with a variety of sensors and microcontrollers (fig1; page 1733, column 1, lines 1-5);
- b. a processor/controller connected to front end sensors through sensor bus (fig 1; page 1733, column 1, lines 2-6);
- c. a sensor situated in the housing (for measuring temperature, humidity, acceleration i.e. inertial sensor) (page 1733, column 1, lines 4-12);
- d. data transmission between the "smart" sensor and the processor/controller is in digital form (fig 2(d); page 1733, introduction: paragraph 1).

Mason discloses all of the subject matter as described above except for specifically teaching the data transmission is configured in such a way that transmitted data has at least one error bit and at least one status bit.

However, Beigel in the same field of endeavor teaches a system where the data is transferred between sensor and processor/controller (21 and 13 in figure 1) and further discloses that data transmission is configured in such a way that transmitted data has at least one error bit (the complete message includes data bits, error control bits paragraphs 0093) and at least one status bit (paragraphs 0039, 0113).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the data transmission including error bit and status bit as suggested by Beigel in the Mason system in order to check whether there is any error in the transmission data and to compensate for that or to implement safety measures as to turn on warning light or alarm or if the data is totally corrupted send a request to get new data. The status data or status bit enables the processor to keep track of the operation of the sensors in the system and makes the control easy as the processor can send a command when the components of the system are free or just to change the mode of operation if required.

Claim 15: Mason discloses all of the subject matter as described above and further discloses that the sensor bus has four lines for synchronous serial communication, and a standard interface between processor/controller and front end sensors (Page 1737, column 1, lines 11-14; page 1734, column 2, lines 20-24).

Claim 17: Mason discloses all of the subject matter as described above and further discloses that the data transmission is bidirectional i.e. the controller/processor sends read and write instructions to the sensors (page 1734, column 1, lines 32-39, and page 1737, column 1, lines 30-40).

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Claim 18: Mason discloses all of the subject matter as described above and further discloses that the data transmission triggers the testing of sensors/devices within the system (page 1742, column 1, paragraphs 1 and 2).

Claim 19: Mason discloses all of the subject matter as described above and further discloses that the data transmission triggers the sensor offset regulation, switches it to different operating state (page 1737, column 1, last paragraph; and page 1742, column 1, last paragraph).

Claim 20: Mason discloses all of the subject matter as described above and further discloses the data transmission through synchronous serial lines with a chip select/enable line (page 1737, column 1, paragraph 1 and 2).

Claim 21: Mason discloses all of the subject matter as described above, but doesn't explicitly disclose that the sensors has a multichannel design. However, since Mason sensors have multiple functions as measuring acceleration and or vibration, sending and receiving data through sensor data bus, coupled to the processor/controller through chip select/enable, and connected to the power supply etc, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a multichannel sensor for the Mason system. One would have been motivated to use a multichannel design in order to optimize the disclosed communication with the processor/controller, and to enable Mason system to perform the multiple functions.

Claim 22: Mason discloses all of the subject matter as described above and further discloses that data transmission triggers the sensor from one operating state to another operating state (page 1737, column 1, paragraphs 1 and 2; and page 1742, column 1, paragraph 1 and 2).

Claims 23-26: Mason discloses all of the subject matter as described above and further discloses that this system could be used for environmental monitoring, temperature measurement, barometric pressure measurement, relative humidity measurement, and acceleration/vibration measurement, but doesn't explicitly disclose that the system is to be used as a part of a restraint system, vehicle dynamic control system, one of a sensor box and a sensor cluster, and a vehicle navigation system as claimed by the applicant. However, the control system as a part of a restraint system, vehicle dynamic control system, one of a sensor box and a sensor cluster, and a vehicle navigation system are intended uses, but not a part of the claimed system. Therefore, little if any, patentable weight is given to the intended uses. Furthermore, it would have been obvious to one having ordinary skill in the art at time the invention was made to use the Mason system or the system described by the applicant as a part of restraint system, vehicle dynamic control system, one of a sensor box and a sensor cluster, and a vehicle navigation system. One would have been motivated to use the portable, low power consuming, able to eliminate interferences and nonlinearities, and highly efficient system as a part of environmental monitoring, temperature measurement, barometric pressure

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measurement, relative humidity measurement, acceleration/vibration measurement, a restraint system, vehicle dynamic control system, one of a sensor box and a sensor cluster, and a vehicle navigation system or the like.

Claim 27: Mason discloses all of the subject matter as described above except for specifically teaching that status bit indicates an operating state of the at least one inertial sensor.

However, Beigel in the same field of endeavor teaches a system where the data is transferred between sensor and processor/controller (21 and 13 in figure 1) and further discloses that status bit indicates an operating state of the at least one inertial sensor (the mode of operation is the operating state; paragraph 0097).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the data transmission with a status bit as suggested by Beigel in the Mason system in order to check the status of the system that enables the processor to keep track of the operation of the sensors in the system and makes the control easy as the processor can send a command when the components of the system are free or just to change the mode of operation if required.

Claim 28: Mason discloses all of the subject matter as described above and further discloses running sensor test (page 1742, column 1, paragraph 1) except for specifically teaching that the status bit indicates running a sensor test. This is inherent that the

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sensor test is done by some kind of instruction by the processor which includes using a status data bit as suggested by Beigel.

Claim 29: Mason discloses all of the subject matter as described above and further discloses the status bit indicates an offset regulation mode (page 1735, column 2, paragraph 1). This is inherent that the offset regulation mode is checked by some kind of mechanism by the system which includes using a status data bit as suggested by Beigel.

Claim 30: Mason discloses all of the subject matter as described above except for specifically teaching the status bit indicates an initialization phase.

However, Beigel in the same field of endeavor teaches a system where the data is transferred between sensor and processor/controller (21 and 13 in figure 1) and further discloses that status bit indicates an initialization phase (paragraphs 0064 and 0070).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the data transmission with a status bit as suggested by Beigel in the Mason system in order to check the status of the system that enables the processor to keep track of the operation of the sensors in the system and makes the control easy as the processor can send a command when the components of the system are free and check if the system in the initialization mode.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hirdepal Singh whose telephone number is 571-270-1688. The examiner can normally be reached on Mon-Fri (Alternate Friday Off) 8:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HS
August 7, 2007



Shuwang Liu
SPE - 2611

**SHUWANG LIU
SUPERVISORY PATENT EXAMINER**